West Texas Initial Attack
Briefing Paper

This paper is an attempt to provide incoming resources some general information on fuels, fire behavior, tactics, and safety as it applies to the Initial attack assignments across the western portions of Texas. It is difficult to provide site-specific information for such a large area so please look up the local experts when you arrive at your duty station.

Fuels and associated Behavior

Brush fuels and cured grass fuels are the fuels that support large fire growth and have exhibited extreme fire behavior.

Grass: Most of the burnover incidents in Texas this year have occurred in dead grass fuels. Dead grass is very sensitive to changes in wind direction and windspeed. A flanking fire in grass can turn into a head fire and triple the rate of spread in a heartbeat. Spread rates in grass can range from 3-8 mph with 15 ft. flame lengths. The Borger fire on March 12, 2006 ran 45 miles in 9 hours averaging 5 mph rate of spread.

Brush: Brush fuel will range in composition and loading across the IA zone. A representative brush fuel would include a mix of juniper, oak, mesquite and a grass surface component. The foliar moisture in the juniper and oak is very low. It does not take much surface intensity to transition a surface fire into the crowns as pictured below.

Individual and group torching will occur when temperatures are in the 85-95 degree range and RH is in the 15-20% range. Adding wind and or slope to these conditions will promote active crown fire. Slope alone will produce short duration crown runs. 20-foot windspeed of 15-20 mph in combination of RH in the 15-20% range will induce sustained crown fire in brush. A 70%-100% component of juniper and oak is generally required for sustained crown fire.

A large component of mesquite will drop the fire out of the crowns to the surface. Transition from surface fire to crown fire occurs quickly in brush. Rate of spread in a running brush crown fire can approach 4mph and produce flame lengths of 30 feet.

A ranch employee operating this dozer was killed when a running brush crown fire overran him during the initial attack. Slope, wind and extremely low foliar moisture combined to produce the running brush crown fire.

Tactics

The safest tactic to employ in cured grass or brush fuel is to anchor and flank while taking the black line with you. Avoid putting unburned fuel between yourself and the fire edge. Indirect tactics that place unburned fuel between the fire and firefighters has been the significant factor in firefighter burnover incidents this year.

Safety Zone Considerations

- Hard black in grass areas are best
- Avoid juniper fuels with reburn potential
- Adequate safety zones can be burned out in grass fuels quickly. Avoid grass fuels that are mixed with juniper as the juniper crowns will easily burn or reburn after a ground fire has passed. If you find yourself in brush fuels with no open grass areas look for the mesquite. The mesquite foliage has a lot of moisture in it now and will resist burning. Fuel loading beneath mesquite is generally light
- Allow for additional safety zone size from standard recommendations due to drought stressed brush fuels and the extreme intensities and flame lengths they produce.